



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Re: Application of: **Reinhold MEIER et al.**
Serial No.: 10/588,538 Confirmation No.: 8360
Filed: August 7, 2006
For: **METHOD FOR CONNECTING COMPONENTS**
Art Unit: 3742
Examiner: Sang Yeop Paik
Customer No.: 23280
Atty. Docket: 5038.1035
Customer No.: 23280

Mail Stop: APPEAL BRIEF – PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

January 11, 2011

APPELLANT'S BRIEF UNDER 37 C.F.R. § 41.37

Sir:

Appellant submits this brief for the consideration of the Board of Patent Appeals and Interferences (the "Board") in support of their appeal of the Office Action dated September 15, 2010 in this application. The statutory fee of \$540.00 for filing an appeal brief has been paid with the previous Appeal Brief dated June 21, 2010.

REAL PARTY IN INTEREST

The real party in interest is MTU Aero Engines GmbH, a corporation having a place of business in Muenchen, Germany and the assignee of the entire right, title and interest in the above-identified patent application. The invention was assigned to MTU Aero Engines GmbH by an assignment from inventor Reinhold MEIER. The assignment was recorded on August 7, 2006 at reel 018180 frame 0266.

I. RELATED APPEALS AND INTERFERENCES

Appellant, his legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

II. STATUS OF CLAIMS

Claims 6 and 8 to 11 are pending. Claims 6 and 8 to 11 have been rejected as per the Office Action dated September 15, 2010.

The rejections to claims 6 and 8 to 11 thus are appealed. A copy of pending claims 6 and 8 to 11 is attached hereto as Appendix A.

III. STATUS OF AMENDMENTS AFTER FINAL

Claim 6 was amended after the Final Office Action and the amendment has been entered as per the Advisory Action dated March 24, 2010 and as noted in the outstanding Office Action at paragraph 2. A Notice of Appeal was filed on October 26, 2010 and received by the U.S.P.T.O. on November 1, 2010.

IV. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 6 recites a method for joining at least two gas turbine components under dynamic load (see, e.g. paragraphs [0011], [0019] and 10, 11 in Fig. 1) comprising:

aligning the at least two gas turbine components relative to one another in an aligned position (see, e.g. paragraph [0012] and 10, 11 in Fig. 1);

joining the at least two gas turbine components together in the aligned position by an auxiliary weld (see, e.g. paragraph [0012] and 12 in Fig. 1); and

welding the at least two gas turbine components using laser powder build-up welding to form a separate weld (see, e.g. paragraph [0012] and 13 in Fig. 1) to join said at least two gas turbine components together (see, e.g. paragraph [0013]).

Dependent claim 8 (argued separately) recites the method as recited in Claim 6, wherein the auxiliary weld is produced by laser welding (see, e.g. [0012] and 12 in Fig. 1) or electron-beam welding (see, e.g. original claim 3).

Dependent claim 9 (argued separately) recites the method as recited in Claim 6, wherein the at least two gas turbine components (see, e.g. paragraph [0016] and Fig. 2) comprise at least two rotor discs (see, e.g. paragraph [0016] and Fig. 2) of a compressor rotor or a turbine rotor (see, e.g. paragraph [0011] and Fig. 2), each of the at least two rotor discs including an axially extending flange (see, e.g. paragraph [0016] and 14, 15 in Fig. 2); and wherein the step of welding joins together the at least two rotor discs at said axially extending flanges of said at least two rotor discs (see, e.g. paragraph [0016] and 16, 17 in Fig. 2).

Dependent claim 10 (argued separately) recites the method as recited in Claim 6, wherein the at least two gas turbine components (see, e.g. paragraph [0016] and Fig. 2) comprise at least two rotor discs (see, e.g. paragraph [0016] and Fig. 2) of a compressor rotor or a turbine rotor, each of the at least two rotor discs including an axially extending flange (see, e.g. paragraph [0016] and 14, 15 in Fig. 2);

wherein the step of aligning includes axially aligning the axially extending flanges (see, e.g. paragraph [0016] and Fig. 2);

wherein the step of joining comprises forming the auxiliary weld at an intersection of the axially extending flanges (see, e.g. paragraph [0016] and Fig. 2);

and wherein the step of welding joins together the at least two rotor discs at said axially extending flanges of said at least two rotor discs (see, e.g. paragraph [0016] and 16, 17 in Fig. 2).

Dependent claim 11 (argued separately) recites method of claim 10, wherein the axially extending flanges (see, e.g. paragraph [0013] and 10, 11 in Fig. 1) of said at least two rotor discs (see, e.g. paragraph [0016] and Fig. 2), when aligned, form a pool crater (see, e.g. paragraph [0013] and Fig. 1) for the laser powder build up welding (see, e.g. paragraph [0013] and Fig. 1).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 6 and 8 should have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 2004/0169022 (“Mega et al.”) in view of U.S. 2,662,277 (“Stone”) or U.S. 2,288,433 (“Boetcher et al”) and US 5,245,155 (“Pratt et al.”) or US 2004/0191064 (“Guo”).

Whether claims 9 to 11 should have rejected under 35 U.S.C. §103(a) as being unpatentable over Mega in view of Stone or Boetcher, and Pratt or Guo as applied to claims 6 and 8 above, and further in view of U.S. 2,492,833 (Baumann) or U.S. 2,200,287 (Lysholm).

VII. ARGUMENTS

Rejections under 35 U.S.C. §103(a)

Claims 6 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mega et al. in view of Stone or Boetcher et al. and Pratt et al. or Guo.

Claim 6 recites:

aligning the at least two gas turbine components relative to one another in an aligned position;

joining the at least two gas turbine components together in the aligned position by an auxiliary weld; and

welding the at least two gas turbine components using laser powder build-up welding to form a separate weld to join said at least two gas turbine components together.

The Office Action first fails by any standard to address the differences between the claim language and the prior art, and actually fails to address the claim language properly as required by MPEP 2141.

Claim 6 requires “joining the at least two gas turbine components together in the aligned position by an auxiliary weld.” Mega simply states that the “Simultaneously, the tip plug 56 is welded temporarily according to necessity.” See [0032]. While the tip plug 56 is welded, there is absolutely no teaching or disclosure that this temporary welding joins tip plug 56 to blade tip section 52, and claimed “joining the at least two gas turbine components together...by an auxiliary weld” is simply not disclosed expressly or inherently in Mega. See MPEP 2112. In fact given the further disclosure regarding welding the temporary weld may simply be a pre-weld of the tip plug alone to improve the final weld.

The assumption in the Office Action that the temporary welding is a joining step is based solely on hindsight and on the Applicant’s own disclosure.

Thus there is also no indication that the temporary welding is even an auxiliary weld as claimed or that the subsequent weld is “a separate weld” as also claimed in claim 6.

The Office Action also does not address the separate weld language but instead talks of “filler metal” which is simply not in the claim.

Moreover, there simply is no proper motivation or reason given for modifying the butt weld Mega, which appears to work fine without a separate weld or a laser powder build up weld.

Withdrawal of the rejection to claim 6 is respectfully requested.

Claim 8: ARGUED SEPARATELY

Claim 8 recites the method as recited in Claim 6, wherein the auxiliary weld is produced by laser welding or electron-beam welding.

In addition to the above arguments, Mega does not discuss how the asserted temporary welding occurs and the claim language of claim 8 is simply not addressed at all by the Office Action.

Claim 9: ARGUED SEPARATELY

Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Mega in view of Boetcher or Stone, and Pratt and Guo as applied to claims 6 and 8, and further in view of US 2,492,833 (Baumann) or US 2,200,287 (Lysholm).

Claim 9 recites the method as recited in Claim 6, wherein the at least two gas turbine components comprise at least two rotor discs of a compressor rotor or a turbine rotor, each of the at least two rotor discs including an axially extending flange; and wherein the step of welding joins together the at least two rotor discs at said axially extending flanges of said at least two rotor discs.

With further respect to claim 9, it is respectfully submitted that it would not have been obvious to modify Mega with Baumann or Lysholm, as Mega is for a repair method only, which is not applicable to such flanges. Nor has the actual claim language actually been addressed as required by MPEP 2141.

Withdrawal of the rejections to claim 9 under 35 U.S.C. §103(a) thus is respectfully requested.

Claim 10: ARGUED SEPARATELY

Claims 10 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mega in view of Boetcher or Stone, and Pratt and Guo as applied to claims 6 and 8, and further in view of US 2,492,833 (Baumann) or US 2,200,287 (Lysholm).

Claim 10 recites the method as recited in Claim 6, wherein the at least two gas turbine components comprise at least two rotor discs of a compressor rotor or a turbine rotor, each of the at least two rotor discs including an axially extending flange;

wherein the step of aligning includes axially aligning the axially extending flanges;

wherein the step of joining comprises forming the auxiliary weld at an intersection of the axially extending flanges;

and wherein the step of welding joins together the at least two rotor discs at said axially extending flanges of said at least two rotor discs.

With further respect to claim 10, it is respectfully submitted that it would not have been obvious to modify Mega with Baumann or Lysholm, as Mega is for a repair method only, which is not applicable to such flanges. Nor has the actual claim language actually been addressed as required by MPEP 2141.

Withdrawal of the rejections to claim 10 and 11 under 35 U.S.C. §103(a) thus is respectfully requested.

Claim 11: ARGUED SEPARATELY

Claim 11 recites the method of claim 10, wherein the axially extending flanges of said at least two rotor discs, when aligned, form a pool crater for the laser powder build up welding.

None of the references disclose such a claimed pool crater, and the Office Action does not identify any. Withdrawal of the rejection to claim 11 is respectfully requested for this reason as well.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance. Favorable consideration of this appeal brief is respectfully requested.

Respectfully submitted,

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APPENDIX A:

PENDING CLAIMS 6 and 8 TO 11
U.S. APPLICATION SERIAL NO. 10/588,538

Claim 6 (previously presented): A method for joining at least two gas turbine components under dynamic load comprising:

aligning the at least two gas turbine components relative to one another in an aligned position;

joining the at least two gas turbine components together in the aligned position by an auxiliary weld; and

welding the at least two gas turbine components using laser powder build-up welding to form a separate weld to join said at least two gas turbine components together.

Claim 8 (previously presented): The method as recited in Claim 6, wherein the auxiliary weld is produced by laser welding or electron-beam welding.

Claim 9 (previously presented): The method as recited in Claim 6, wherein the at least two gas turbine components comprise at least two rotor discs of a compressor rotor or a turbine rotor, each of the at least two rotor discs including an axially extending flange; and wherein the step of welding joins together the at least two rotor discs at said axially extending flanges of said at least two rotor discs.

Claim 10 (previously presented): The method as recited in Claim 6, wherein the at least two gas turbine components comprise at least two rotor discs of a compressor rotor or a turbine rotor, each of the at least two rotor discs including an axially extending flange;

wherein the step of aligning includes axially aligning the axially extending flanges;

wherein the step of joining comprises forming the auxiliary weld at an intersection of the axially extending flanges;

and wherein the step of welding joins together the at least two rotor discs at said axially extending flanges of said at least two rotor discs.

Claim 11 (previously presented): The method of claim 10, wherein the axially extending flanges of said at least two rotor discs, when aligned, form a pool crater for the laser powder build up welding.

APPENDIX B

Evidence Appendix under 37 C.F.R. §41.37 (c) (ix):

No evidence pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 and relied upon in the appeal has been submitted by appellants or entered by the examiner.

APPENDIX C

Related proceedings appendix under 37 C.F.R. §41.37 (c) (x):

As stated in “2. RELATED APPEALS AND INTERFERENCES” of this appeal brief, appellants, their legal representatives, and assignee are not aware of any appeal or interference that directly affects, will be directly affected by, or will have a bearing on the Board’s decision in this appeal.